

AD-A240 426



2

NAVAL WAR COLLEGE  
NEWPORT, R.I.

MARITIME PATROL AIR (MPA) IN THE NATIONAL MILITARY STRATEGY

DTIC  
ELECTE  
SEP 12 1991  
S D D

by

Howard S. Hilley  
Commander, U.S. Navy

and

Dennis J. Sweeney  
Commander, U.S. Naval Reserve

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this paper reflect our own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signatures:

*Howard S. Hilley*  
*Dennis J. Sweeney*

21 June 1990

Paper directed by COL Theodore L. Gatchel, USMC  
Chairman, Department of Operations

Approved by:

This document has been approved  
for public release and sale; its  
distribution is unlimited.

Faculty Research Advisor

Date

91 8 12 011

91-10386

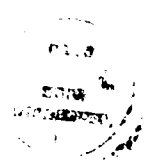


## REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION <b>UNCLASSIFIED</b>			1b RESTRICTIVE MARKINGS		
SECURITY CLASSIFICATION AUTHORITY			3 DISTRIBUTION AVAILABILITY OF REPORT <b>DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited</b>		
2b DECLASSIFICATION/DOWNGRADING SCHEDULE			5 MONITORING ORGANIZATION REPORT NUMBER(S)		
4 PERFORMING ORGANIZATION REPORT NUMBER(S)			7a NAME OF MONITORING ORGANIZATION		
6a NAME OF PERFORMING ORGANIZATION <b>OPERATIONS DEPARTMENT</b>		6b OFFICE SYMBOL (If applicable) <b>C</b>	7b ADDRESS (City, State, and ZIP Code)		
6c ADDRESS (City, State, and ZIP Code) <b>NAVAL WAR COLLEGE NEWPORT, R.I. 02841</b>		9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER			
8a NAME OF FUNDING/SPONSORING ORGANIZATION		8b OFFICE SYMBOL (If applicable)	10 SOURCE OF FUNDING NUMBERS		
8c ADDRESS (City, State, and ZIP Code)		PROGRAM ELEMENT NO	PROJECT NO	TASK NO	WORK UNIT ACCESSION NO
11 TITLE (Include Security Classification) <b>MARITIME PATROL AIR (MPA) IN THE NATIONAL MILITARY STRATEGY (2)</b>					
12 PERSONAL AUTHOR(S) <b>Commander Howard S. Hilley, USN and Commander Dennis J. Sweeney, USNR</b>					
13a TYPE OF REPORT <b>FINAL</b>		13b TIME COVERED FROM TO	14 DATE OF REPORT (Year, Month, Day) <b>1991, June, 21</b>		15 PAGE COUNT <b>47</b>
16 SUPPLEMENTARY NOTATION <b>A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.</b>					
17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Maritime Strategy Future MPA		
			P-3 Aircraft Total Force		
			VP(S) Concept		
19 ABSTRACT (Continue on reverse if necessary and identify by block number) This paper presents a proposed role for the United States Maritime Patrol Air (MPA) force component in the National Military Strategy. It is asserted that the current structure and employment of MPA is outdated due to changes in the threat posed by the Soviet submarine forces, but that a viable MPA force is still required. The proposed strategy is based upon the authors' vision of a smaller, restructured VP community in the year 1995. The strategy focuses on the MPA role in countering the more likely threats presented by regional crises and contingencies while maintaining the ability to respond rapidly with a credible ASW force in the event of a return of the Soviet threat. Operational issues such as employment plans, the requirement for forward deployed sites, integration and coordination with United States and other allied forces, and the Total Force concept are addressed.					
20 DISTRIBUTION AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			21 ABSTRACT SECURITY CLASSIFICATION <b>Unclassified</b>		
22a NAME OF RESPONSIBLE INDIVIDUAL <b>CHAIRMAN, OPERATIONS DEPARTMENT</b>			22b TELEPHONE (Include Area Code) <b>841-3414</b>		22c OFFICE SYMBOL <b>C</b>

Abstract of  
MARITIME PATROL AIR (MPA) IN THE NATIONAL MILITARY STRATEGY

This paper presents a proposed role for the United States Maritime Patrol Air (MPA) force component in the National Military Strategy. It is asserted that the current structure and employment of MPA is outdated due to changes in the threat posed by the Soviet submarine forces, but that a viable MPA force is still required. The proposed strategy is based upon the authors' vision of a smaller, restructured VP community in the year 1995. The strategy focuses on the MPA role in countering the more likely threats presented by regional crises and contingencies while maintaining the ability to respond rapidly with a credible ASW force in the event of a return of the Soviet threat. Operational issues such as employment plans, the requirement for forward deployed sites, integration and coordination with United States and other allied forces, and the Total Force concept are addressed.



Accession For	
NTIS CRAG	✓
DTIC TAB	
Unannounced	
Justification	
By	
Distribution	
Availability	
Dist	
A-1	

## LIST OF FIGURES

	<u>PAGE</u>
1. CURRENT AND FUTURE MPA FORCE STRUCTURE .....	25
2. CURRENT AND FUTURE MPA DEPLOYMENT SITES .....	27
3. OPERATIONAL CONTINUUM .....	28

## TABLE OF CONTENTS

CHAPTER	PAGE
ABSTRACT .....	ii
LIST OF FIGURES .....	iii
I INTRODUCTION/BACKGROUND .....	1
II MPA'S HISTORICAL ROLE IN NATIONAL MILITARY STRATEGY	5
III ANALYZING THE CHANGING THREAT .....	11
IV CURRENT MPA FORCE STRUCTURE AND EMPLOYMENT .....	16
V IMPLICATIONS FOR THE FUTURE .....	18
A New Operational Concept for MPA .....	20
The MPA Force of the Future .....	24
VI OPERATIONAL EMPLOYMENT IN THE MARITIME STRATEGY ...	26
Warfighting .....	29
Peacetime Presence .....	34
Contingencies and Crisis Response .....	36
VII CONCLUSION .....	40
FOOTNOTES .....	42
BIBLIOGRAPHY .....	43

## CHAPTER I

### INTRODUCTION/BACKGROUND

"Where do we go from here?"

Such is the dilemma currently facing the Navy's VP Community, the United States fleet's Maritime Patrol Air (MPA) component. Flying various iterations of the Lockheed P-3 Orion from a myriad of forward deployed sites, Navy VP squadrons played a significant role in neutralizing the large Soviet submarine threat for more than twenty years. Whether working independently or in coordination with other air, surface, and/or subsurface forces, the P-3 proved to be an exceptionally reliable and capable long-range ASW platform with the ability to successfully locate, localize, and track virtually all classes of Soviet submarines. Operating globally, VP forces seldom went wanting for business.

Then came perestroika, the end of the "Evil Empire", and a perception of the Soviet threat diminishing as our Cold War adversaries turned their focus inward and undertook an ambitious program of internal reform. Included in this process has been the dismantling and salvaging of many of their older submarine platforms, and a dramatic reduction in the out-of-area deployments by those remaining in service. Consequently, for the first time in a generation of naval officers there are few real world submarine targets for our ASW forces to prosecute. This has been particularly evident

at several P-3 deployment sites, leaving more than one sector commander scrambling for ways to maintain combat readiness while his deployed flight crews flew more and more of their flight hours on secondary and tertiary missions.

The perceived lessening of the Soviet submarine threat and the reduced level of ASW activity at VP deployment sites resulted in both Congress and the Navy's leadership looking for means to save increasingly scarce defense dollars by making cuts in the active P-3 forces. The first of these occurred in April 1989, when OP-05 (Deputy Chief of Naval Operations, Air Warfare) ordered that the programmed aircraft allowance of each of the 24 active duty VP squadrons be reduced from nine to eight aircraft during FY-90. This drawdown was accompanied by aircrew and personnel cuts.

The initial horizontal cut was followed by Secretary of the Navy Garrett's decision to cancel the planned acquisition of the Lockheed P-7 Phoenix, the proposed replacement for the aging P-3s. The P-7 program was discontinued in July 1990, after the Lockheed Corporation failed to develop an aircraft that met Navy requirements. It now appears that the older P-3s may be replaced with new P-3s, as Lockheed is reportedly going to reopen the P-3 production line.<sup>1</sup>

Despite losing the proposed new platform with its increased range and capabilities, the CNO directed the decommissioning of four VP squadrons (two from each coast) during FY-91. This reduction, which has nearly been

completed, further reduces the regular MPA forces by a total of 32 aircraft. Although not confirmed, it is probable that additional active P-3 squadrons will be decommissioned in FY-92.

While the Navy's leaders were busy making reductions in VP force, Congress got involved in the process when the Senate Committee on Armed Services recommended a bill for inclusion in the National Defense Authorization Act for FY-91 which would have directed the Secretary of the Navy to have equal numbers of P-3C aircraft in active and reserve squadrons by September 30, 1996.<sup>1</sup> Had this recommendation been adopted, it would ultimately have required the transfer of 80 P-3C aircraft from active to reserve squadrons so all early model P-3B aircraft could be retired. The proposed bill did provide the Secretary of Defense with waiver authority in implementation if he determined the submarine threat presented by the Soviet Union had increased.<sup>3</sup>

Although the proposed legislation was not enacted, the debate concerning the future of our VP forces continues in both Congress and the Pentagon. With the removal of the Soviet threat, at least for the foreseeable future, there are serious questions as to what role or roles we expect our MPA forces to play in the years ahead. On the surface, it appears that there is no definitive plan for integrating our MPA forces into the National Military Strategy. As a result, VP force planning is being driven by "rice bowl" politics rather



than through an organized and logical strategy designed to provide forces tailored to serve the National Command Authority. Ultimately, the cognizant CinCs are left with uncertainties regarding both the future size and employment status of their MPA forces.

What follows herein is a systematic approach designed to determine how our MPA forces should be employed in the years ahead. The four basic steps in this approach are as follows:

- 1 - Determine MPA's role in the National Military Strategy.
- 2 - Analyze changes in the threat(s) MPA is designed to counter.
- 3 - With regard to the threat(s), redefine MPA's role for the future and restructure the MPA forces accordingly.
- 4 - Design an employment plan which enables the MPA force to maintain combat readiness while fulfilling all operational objectives.

Of note, this paper is not intended to be an exercise in force planning; however, when discussing our MPA forces it would be futile to address operational issues without including a proposed force structure, since the current uncertainties regarding the size of future VP forces make meaningful operational planning for the MPA force virtually impossible. In an era of diminishing assets and budgetary constraints, operational planning and force planning are necessarily entwined with one another.

## CHAPTER II

### MPA'S HISTORICAL ROLE IN THE NATIONAL MILITARY STRATEGY

While somewhat dated, the Maritime Strategy as published in the U.S. Naval Institute Proceedings in 1986 continues to provide excellent guidance concerning the role of our naval forces in the overall National Military Strategy. As Admiral Trost wrote when he was the Chief of Naval Operations, the Maritime Strategy "provides a concept of operations rather than a war plan", and it "is designed to support the entire range of actions needed to represent United States global interests as a maritime nation and a world superpower".<sup>4</sup> Moreover, it provides the framework for considering uses of maritime power across the spectrum of conflict.

When examining the viability of a particular force component, it is useful to break down the spectrum of conflict into the three specific levels then CNO Admiral Watkins addressed in 1986.<sup>5</sup> These are: peacetime presence, intended to deter and defend attempts at physical denial of the sea and to further international stability through regional balances of power; crises response, involving the ability to swiftly bring forces to bear to contain and control crises before they escalate out of control; and warfighting, whether it be with the Soviet Union or with a Third World nation such as Iraq who threatens our vital interests. By examining the historical

contributions of the VP forces at each of the three levels of conflict during the Cold War years, we should be able to build an understanding of how these forces can best be integrated into the overall national strategy in the years ahead.

Operated over a global perimeter from bases that have extended from Sicily in the Mediterranean to Iceland, Spain and the Azores in the Atlantic, the Philippines, Guam, Okinawa and Japan in the Pacific, and Diego Garcia in the Indian Ocean, as well as the continental United States, Alaska and Hawaii, P-3 aircraft squadrons have traditionally fulfilled vital peacetime presence and crisis response missions. Most notable of the peacetime presence mission areas has, of course, been the ASW effort directed primarily at the Soviets but which has also served as a counter to Third World submarine threats. While most of this effort has centered on the deterrent effects of repeatedly demonstrating the ability to locate and track potentially hostile submarines, of equal importance have been the VP forces ability to collect intelligence on these units. This aspect of P-3 operations has contributed directly to our ability to assess adversary capabilities, to the development of new tactics, and to the advancement of our ASW technology.

Aside from ASW, VP forces have been continually involved in surface surveillance operations in all theaters. Using inverse synthetic aperture radar (ISAR)\*, a P-3 is

---

\*NOTE: ISAR has not yet been retrofitted into all P-3 aircraft currently in service.

capable of locating and identifying surface targets at considerable distances, and with Electronic Support Measures (ESM) it has the ability to detect potentially hostile units at even greater distances. These capabilities, coupled with the aircraft's range, speed, and onstation endurance, make the P-3 one of the Navy's most effective and efficient surface surveillance platforms. Illustrative of this is the fact that one P-3 can search 95,000 square nautical miles of the ocean surface in an hour. In contrast, the equivalent search rate of a destroyer is less than 1000 square nautical miles per hour.\*

While the aircraft's performance characteristics have made the P-3 adaptable to other missions, such as search and rescue or as a communications platform, it has primarily been the ASW and surface surveillance missions which have made the VP forces an important component in the Navy's maintenance of a viable and visible peacetime presence. This presence has included actual operations involving the locating and tracking of Soviet or Third World surface and sub-surface units, as well as numerous national, bilateral, and multi-national exercises.

The P-3's excellent surface surveillance capabilities have also resulted in VP forces playing an increasingly larger

---

\*NOTE: P-3 aircraft and destroyer open-ocean search rates provided by Lockheed - California Company.

---

role in the efforts to stem the flow of illegal drugs into the United States. At present, P-3 squadrons routinely perform detection and monitoring (D&M) operations in the Atlantic, the Caribbean Sea, the Gulf of Mexico, and in the areas of the Pacific adjacent to the Central American isthmus and the southern California coast.

Aside from the peacetime presence benefits, one argument for keeping VP forces forward deployed around the globe has been that doing so has provided the Navy a platform it could get on station in any theater within a few hours of a crisis developing. The counter-argument to using P-3s in crisis response scenarios has been the aircraft's lack of defensive capabilities. This has limited the utility of VP forces in situations where there were significant air or surface-to-air threats and no tactical air support available. Consequently, MPA involvement in crisis response scenarios has frequently been confined to providing ASW and surface surveillance support for carrier battlegroups. Nonetheless, VP forces have been involved in varying degrees in numerous crisis response operations, ranging from the Cuban Missile Crisis up to and including Operation Desert Shield.

While the P-3 undoubtedly played a large role in the winning of the Cold War, the aircraft's warfighting capabilities remain largely untested in actual hostile

operations.\* Capable of carrying a variety of weapons which include torpedoes, depth bombs, mines, and harpoon missiles, it would appear that the P-3 would present a credible threat to virtually any surface or sub-surface unit. Through regular exercises and the maintenance of a rigorous aircrew qualification and readiness system, all VP squadrons stay expertly prepared in all mission areas. Nevertheless, it has been argued that the P-3's defenselessness in a region with aircraft and both surface and sub-surface missile threats would make our VP forces essentially worthless in a major war, and particularly so with regard to the Soviets.\*\* While that argument may contain some valid points of concern, it ignores the fact that the ISAR radar and harpoon missile combination gives the P-3 a credible counter to most surface threats, and that when the aircraft is operated low over the water it is a difficult platform for other aircraft to find or to target. Moreover, while we normally view our aircraft carriers as a means of power projection (i.e. "putting bombs on the beach"), in the milieu of a United States - Soviet war the most

---

\*NOTE: VP contributions to Operation Desert Storm have not yet been documented, although it could be speculated that P-3s were used in the Mediterranean Sea and Persian Gulf/Arabian Sea in surface surveillance/locator roles.

\*\*NOTE: This was the theme of an article by LCDR Kenneth B. Sherman, USNR, entitled "Orion the Hunted", published in U.S. Naval Institute Proceedings, October 1986, pp. 90-92.

---

effective use of our carrier forces would probably be in the role of providing air defenses for United States and allied MPA operating in vital regions such as the Greenland-Iceland-Norway (GIN) gap. Thus, even accepting that our current MPA forces do have some noteworthy vulnerabilities, the P-3 aircraft continues to represent a formidable weapons system in virtually any wartime scenario. Moreover, it is clear that historically we have planned to rely heavily on MPA in both ASW and surface surveillance roles in any protracted engagement involving an adversary possessing a capable naval force.

### CHAPTER III

#### ANALYZING THE CHANGING THREAT

It's important to understand the threats to our national interests when attempting to determine how our MPA forces can best support the National Military Strategy. Although threats involve a combination of capabilities and intentions, it is prudent to focus on the capabilities of potential adversaries when evaluating the threats to the United States and our allies, as intentions are difficult to quantify and may be subject to rapid changes.

With regard to the Soviet Union, it has become clear that recent changes are more than just rhetoric. The move toward a more open, less oppressive society, democratization, and recent attempts to create a market economy are welcome signals that the Cold War is indeed over. While they have endured a high level of domestic turmoil and undoubtedly face some difficult times ahead, the Soviets have unquestionably moved into a new era of cooperation with the United States, and this new era has dramatically reduced the largest of our threats.

Accepting that the changed political climate in the Soviet Union has also resulted in a change in intentions vis à vis the West, we still cannot totally ignore the Soviet's immense military capability and their ability to initiate strategic warfare against the United States. While Gorbachev



has initiated steps to reduce his nation's military capability to a level of "reasonable sufficiency" for the defense of the Soviet Union, his cutbacks to date have not included any lessening of capability in his strategic submarine forces.

While there has definitely been a reduction in Soviet submarine activity and even though they are destroying significant numbers of older boats (including 23 Hotel/Echo/November nuclear submarines and over 100 ancient diesel boats), the Soviet shipbuilding program is continuing and producing a new generation of substantially quieter submarines at an average construction rate of five to six hulls a year. The resultant effect is that the Soviet submarine force of the future will be more potent than ever.<sup>6</sup>

The continual growth of the Soviet submarine force is not necessarily a clear indicator of Soviet intent for the future. Change comes slowly in Soviet society, and it is certainly conceivable their continuing naval shipbuilding programs stem more from their system's bureaucratic inertia rather than from a grand plan to acquire overwhelming military hardware. Nevertheless, even if that is the situation now - and there are no means for us to be certain it is - we cannot totally discount the Soviets enormous military capability while they are undergoing a period of economic and political upheaval with civil unrest and numerous regional instabilities. In that fluid environment, Gorbachev's reforms are not assured, nor is his survival as a political leader.

If the current situation were to deteriorate and result in civil war, it is not unlikely the Soviet military would step to the fore and seize control of the government. If that were to happen, the Soviet Navy could immediately reemerge as a threat to the West. We cannot totally discount that possibility.

Throughout the Cold War years, ASW was the Department of the Navy's number one warfare priority. That relative standing was founded in the belief that United States superiority in anti-submarine warfare was critical to strategic deterrence, warning, and all other warfare areas.<sup>7</sup> It could be argued that while the reduction in the Soviet threat has reduced our own requirement for numbers of ASW forces, the need for the United States to maintain ASW superiority has not changed. With regard to the Soviets, we should endeavor to maintain our technological advantages in ASW while also retaining the ability to remobilize our ASW forces if and when the Soviet threat returns. Both active and reserve MPA forces should have roles in our strategy for meeting these criteria.

If we ignore the potential Soviet threat for the sake of discussion, what other threats are there which require MPA forces? Countries in the Middle East, Europe and on the Pacific rim are critical to the economic well-being of the United States, and each of these areas contain one or more threats to our SLOCs from unstable or potentially aggressive

states. In terms of a submarine threat to merchant shipping, only a moderate capability exists outside of that possessed by our allies and the Soviets. Thus, while reportedly more than 21 Third World countries now collectively possess more than 250 submarines,<sup>8</sup> few possess forces of sufficient size to present a major threat to the United States or our allies. For example, North Korea maintains a fleet of 22 attack submarines; Indonesia, three attack submarines; India, 19 submarines with six or seven more under construction; and Libya, six ex-Soviet Foxtrot diesels. Each of these countries also maintains various mixes of surface combatants with India and China among the most formidable. For instance, India operates two medium attack carriers, five destroyers, 19 frigates, 12 corvettes, and an assortment of other craft.<sup>9</sup>

If we take the above limited capabilities and also consider the intent, it is evident that the submarine and naval threat level in the Third World is reasonably low. Only a few potential adversaries such as North Korea and Libya stand out, and even those do not require that we maintain a continually forward deployed MPA force for ASW purposes. Given that, MPA's ASW role with respect to the Third World will generally be limited to crisis response scenarios for the foreseeable future.

MPA may continue to play a role in performing open-ocean surveillance and intelligence gathering in the years ahead, as the Navy maintains a requirement to monitor the

movements of hundreds of warships of other navies and thousands of merchant vessels on a routine basis. In an era of growing multi-national corporations and ever increasing international trade, with emerging maritime powers in Asia, and with an increase in anti-drug detection and monitoring operations, this requirement has steadily grown rather than diminished.

At the same time, the continual erosion of overseas basing rights threatens to undermine our ability to operate in some of the more distant regions around the globe. In elucidating the National Security Strategy 1990, President Bush stated that "our forward presence will remain a critical part of our defense posture for the foreseeable future", while also acknowledging the growing pressures for change in our global deployments and the increasing operational restrictions on our forces overseas.<sup>10</sup> If we intend to maintain a peacetime presence and rapid crisis response capability in such areas as the far reaches of the Pacific and in the resource rich region of Southeast Asia, it is logical that we maintain some MPA forces in proximity to these areas.

## CHAPTER IV

### CURRENT MPA FORCE STRUCTURE AND EMPLOYMENT

With our continuing requirements in ASW, intelligence gathering, open-ocean surveillance and anti-drug operations, there is no question that our MPA forces will continue to play a meaningful role in the implementation of our National Military Strategy. What remains is to determine how our MPA forces should be structured and employed in view of the reduced threat and current budgetary considerations.

Our active MPA forces currently consist of 20 squadrons with eight P-3C aircraft each. These are equally divided among four airwings, two at separate locations on each coast. As is the case with many of our naval forces, approximately one third of our VP squadrons are forward deployed at any given point in time. To support these forces, most MPA deployment sites maintain extensive infrastructures and facilities, including quarters for billeting, hangars, aviation maintenance and supply departments, ordnance depots, and ASW Operations Centers (ASWOCs). Additionally, mobile operation centers are maintained and may be deployed when VP forces make lengthy detachments to sites not possessing adequate support.

Most active P-3 aircraft are between 10 and 20 years old, and all have gone through varying degrees of modification as updated ASW and avionics systems have been incorporated

into the airframes. Consequently, all active squadrons do not possess equal capabilities. Nonetheless, since all squadrons do have the same basic airframe (with similiar range and onstation duration limits) they will be treated as equivalent in this discussion.

In addition to the active forces, our MPA forces have a sizeable reserve component of 13 P-3 squadrons. All but two reserve squadrons presently fly the older P-3B, with the exceptions being one squadron on each coast with the newest iteration of P-3C (the Update III). Like their active counterparts, reserve P-3B squadrons have eight aircraft each, whereas the reserve Update III squadrons presently have six aircraft each.

Each reserve squadron is normally forward deployed for one month each year (during which their personnel complete a two week Annual Training requirement). In numbers, the reserves now constitute about 40 percent of the P-3 force, and they normally fulfill about 10 percent of MPA's forward deployed commitment.\*

---

\*NOTE: Based on aircraft/days deployed.

---

## CHAPTER V

### IMPLICATIONS FOR THE FUTURE

President Bush, in a speech delivered at the Aspen Institute in Aspen, Colorado on August 2, 1990, proposed that "our task today is to shape our defense capabilities to ... changing strategic circumstances".<sup>11</sup> He called for a smaller defense force shaped by the needs of regional contingencies -- and peacetime presence. He cautioned against merely reducing the size of the force across the board and emphasized restructuring along with downsizing. What we can't afford is a force too large for the diminishing threat and ill suited to meet the more likely challenges that lay ahead.<sup>12</sup>

With the Soviet submarine threat currently in abeyance, do we still require such a large active and reserve MPA force component? The answer is clearly no - both the VP force structure and forward deployed posture were threat driven, and neither remains valid in light of recent changes in the Soviet Union. Even if the Soviets were to revert to their former mindset virtually overnight, an argument could be made that the Soviet Navy's adoption of the "bastion defense" strategy for their SSBN's - in conjunction with the development of extremely long range SLBM's - has significantly altered the environment which led to the maintaining and deploying of such large numbers of P-3 aircraft.

At present, the most vital "platform specific" mission forward deployed MPA performs is the intelligence collection effort on Soviet and Third World submarines. This mission remains critical, particularly with regard to new construction units, as it contributes significantly to our ability to maintain ASW superiority over all potential adversaries.

Looking at the previously discussed potential threats at each of the three levels of conflict leads to the following conclusions concerning MPA forces:

1 - one forward deployed P-3 squadron on each coast should suffice to fulfill both the peacetime presence and crisis response requirements in the current ASW threat environment.

2 - the potential for a reemergence of the Soviet threat still dictates that we maintain a capable, well-trained and well-equipped P-3 reserve force.

3 - the requirement for open-ocean surveillance, and in particular anti-drug detection and monitoring operations, has not diminished.

From a force planning perspective, the current deployment tempo would dictate that we maintain three fully qualified P-3 squadrons on each coast. While the size of these squadrons may vary between the two coasts, it is envisioned that each would be somewhat larger than the current squadrons of eight aircraft each. The reasoning behind the larger squadrons will be discussed in the section dealing with the MPA deployment plan.



From an operational standpoint, the proposed reduction in the active P-3 forces would necessitate a fundamental change in the mindset of theater commanders responsible for tasking VP squadrons, as it may dictate an abandonment of the policy wherein we attempt to keep a P-3 overhead virtually all Soviet submarines involved in out-of-area deployments. In view of the perceived lessening of the Soviet threat, this change seems both logical and prudent.

#### A NEW OPERATIONAL CONCEPT FOR MPA

Dramatically reducing the size of the VP force would present some problems which would need to be resolved. These would include:

- finding an alternative surveillance platform to perform many of the open-ocean search missions traditionally allotted to P-3 squadrons.
- maintaining an adequate pool of experienced P-3 pilots and aircrew from which to draw qualified reservists.
- developing a plan to maintain a reduced but functional ASW infrastructure at those forward deployed sites which will no longer be utilized on a continuous basis. The current ASW infrastructure at most VP deployment sites includes many components which are essential to our ability to perform airborne ASW. If we allow this infrastructure to fall into disrepair to the point where it cannot be rapidly restored to

full capability, our ASW capabilities will be adversely affected and noticeably reduced in many regions of the world.

One means of abating the above problems could be found in converting six of our present VP squadrons into smaller and more mission-specific VP(S) squadrons. Conceptually, VP(S) squadrons would continue to use P-3 aircraft, but normally only in surveillance roles. These squadrons, designed for cost, training and mission efficiency in an era of declining ASW requirements, would reduce the tasking and workload on the smaller number of regular and reserve VP squadrons while playing a role in filling our open-ocean surveillance requirements. Properly tasked and integrated into the fleet, VP(S) squadrons could contribute greatly to our ability to maintain a viable peacetime presence and crisis response capability while complementing our full VP squadrons and enabling those to sustain high levels of ASW readiness.

At present, all P-3 flight crews - whether active or reserve - are tasked with meeting stringent qualification and readiness requirements centered around the aircrew concept. That is, given the complexity of the aircraft and its variety of missions, 12 member flight crews are treated as individual entities within squadrons for both qualification and readiness purposes. Most critical crew positions on an aircrew require from 18 to 24 months of training prior to initial qualification, and while it is possible to interchange personnel between flight crews, doing so is viewed as

adversely affecting readiness due to the detrimental effects on crew coordination.

Flight crew readiness within VP squadrons is measured via a system which considers overall mission qualifications as well as demonstrated proficiency and currency in all vital mission areas. These include ASW expertise against both diesel and nuclear submarines, the ability to perform coordinated operations with dissimilar units, and success in torpedo, bombing and mining exercises. Since active squadrons normally incur approximately a 30 percent turnover in personnel annually, a majority of their non-deployed months are dedicated to training and obtaining both unit and flight crew readiness qualifications. In contrast, reserve VP squadrons must dedicate essentially all of their deployed time to maintaining readiness, as their flight crews are only together for one weekend each month during the remainder of the year. Despite this limited training time together, reserve aircrews have traditionally done well when deployed, as they are comprised totally of seasoned and experienced personnel.

Surveillance missions contribute only marginally to VP readiness, and extended surveillance operations such as those involved in anti-drug detection and monitoring can actually be detrimental, as they detract from training time in other mission areas. Heavy surveillance tasking is a particular problem for VP reserve forces, who by necessity need to use

virtually all of their limited training time to maintain ASW proficiency.

In contrast, the envisioned VP(S) squadrons would not be manned at the same levels as full VP squadrons, and would not operate under the same readiness guidelines. Each VP(S) squadron would be a 7 aircraft/10 flight crew squadron with limited ASW, ASUW, and mining capabilities, and manned primarily to fulfill surface surveillance commitments. Of the 10 flight crews, only five would be complete 12 man crews as are normally found in regular VP squadrons. The other five crews would only be partial crews - i.e. a "partial crew" is a standard P-3 tactical crew less one naval flight officer (NFO), two acoustic sensor operators, the inflight ordnanceman, and the inflight equipment technician.

There are several key features of the VP(S) concept which should be noted. The first is that VP(S) squadrons are deployable, although they would deploy to environments in which the main MPA role would be surveillance rather than ASW operations. The next feature is that VP(S) squadrons are less expensive to operate than regular VP squadrons. Fewer flight crews, reduced manning requirements, less ASW related training and fewer flight hours all contribute to less costly operations.

Another feature of VP(S) squadrons is that they represent reconstitutable VP squadrons. Each of these squadrons would be manned by experienced personnel who had

previously served in regular VP squadrons, and although the aircraft would not normally be used in ASW operations, the squadron's full ASW aircrews would keep the P-3's ASW equipment in an operable status. Assigning reserve personnel to each VP(S) squadron as part of a Selected Augmentation Unit (SAU) would give the squadrons the ability to rapidly fill out all the partial flight crews and increase the number of full ASW crews, should that be necessary to meet a resurgent Soviet threat.

#### THE MPA FORCE OF THE FUTURE

President Bush has stated that by 1995 our security needs can be met by a force significantly smaller than today's.<sup>13</sup> With that in mind, by 1995 the MPA force should be restructured into three parts: regular VP squadrons, VP(S) squadrons, and the reserve VP forces. As will be discussed later, each of these components will play a role in the Navy maintaining a viable ASW force yet with a focus toward the new strategic realities. Figure 1 illustrates a comparison of the present MPA force with that envisioned for 1995.

FIGURE 1

1991 MFA Forces

20 VF squadrons (active)  
 \* 8 aircraft @ sqdn  
 \* 12 flight crews @ sqdn

13 VF squadrons (reserve)  
 \* 2 aircraft @ sqdn  
 \* 14 flight crews @ sqdn

1995 MFA Forces

6 VF squadrons (active)  
 \* 10 aircraft @ sqdn  
 \* 15 flight crews @ sqdn  
  
 6 VP(S) squadron (active)  
 \* 7 aircraft @ sqdn  
 \* 10 flight crews @ sqdn  
     - 5 full ASW crews  
     - 5 partial flight crews

9 VF squadrons (reserve)  
 \* 10 aircraft @ sqdn  
 \* 15 flight crews @ sqdn

TOTALS

1991

1995

Aircraft:	active VF	160 .....	60
	active VP(S)	0 .....	42
	reserve VF	104 .....	90
Aircrews:	active VF	240 .....	90
	active VP(S)	0 .....	60
	reserve VF	182 .....	135

## CHAPTER VI

### OPERATIONAL EMPLOYMENT IN THE MARITIME STRATEGY

As has been noted, VP squadrons have historically maintained continuous presence at forward deployment sites throughout the oceans of the northern hemisphere. (Figure 2). However, the downsizing of MPA necessitates a change in the way we deploy and employ the remaining force. There can be no more "business as usual" with the smaller, restructured force.

While the possibility of conflict with the Soviet Union cannot be totally discounted, at present this seems among the least likely type of situation in which we can expect to become involved. Figure 3, which is an excerpt from unpublished Naval War College course material, proposes an operational continuum for 1990 and beyond which ranges from peacetime presence to strategic nuclear war. Along this continuum, the predominant requirements for the 1990s will be peacetime presence, surveillance, and counternarcotics operations. Increasing in probability of occurrence will be regional crises and regional conflicts. MPA should be correctly postured for utilization across this spectrum of conflict.

Although the MPA mission will not change significantly, the reduced force dictates that a new operational strategy be implemented to effectively support the nation's Maritime Strategy. How we "fight the force" will be analyzed below in

PRIMARY DEPLOYMENT SITES

<u>1990</u>	<u>1995</u>
<u>Atlantic/Mediterranean</u>	
Keflavik, Iceland	Keflavik, Iceland - VP
Lajes, Azores	Roosevelt Roads, PR - VP(S)
Rota, Spain	<u>**Flexible Sites:</u>
Sigonella, Sicily	Lajes, Azores
Bermuda	Rota, Spain
Roosevelt Roads, PR	Bermuda
	Sigonella, Sicily
<u>Pacific/Indian Ocean</u>	
Adak, Alaska	Misawa, Japan - VP
Misawa, Japan	Panama - VP(S)
Kadena, Okinawa	<u>**Flexible Sites:</u>
Cubi Point, RP	Adak, Alaska
Diego Garcia	Kadena, Okinawa
Panama	Cubi Point, RP
Agana, Guam*	Diego Garcia
	Agana, Guam

NOTES:

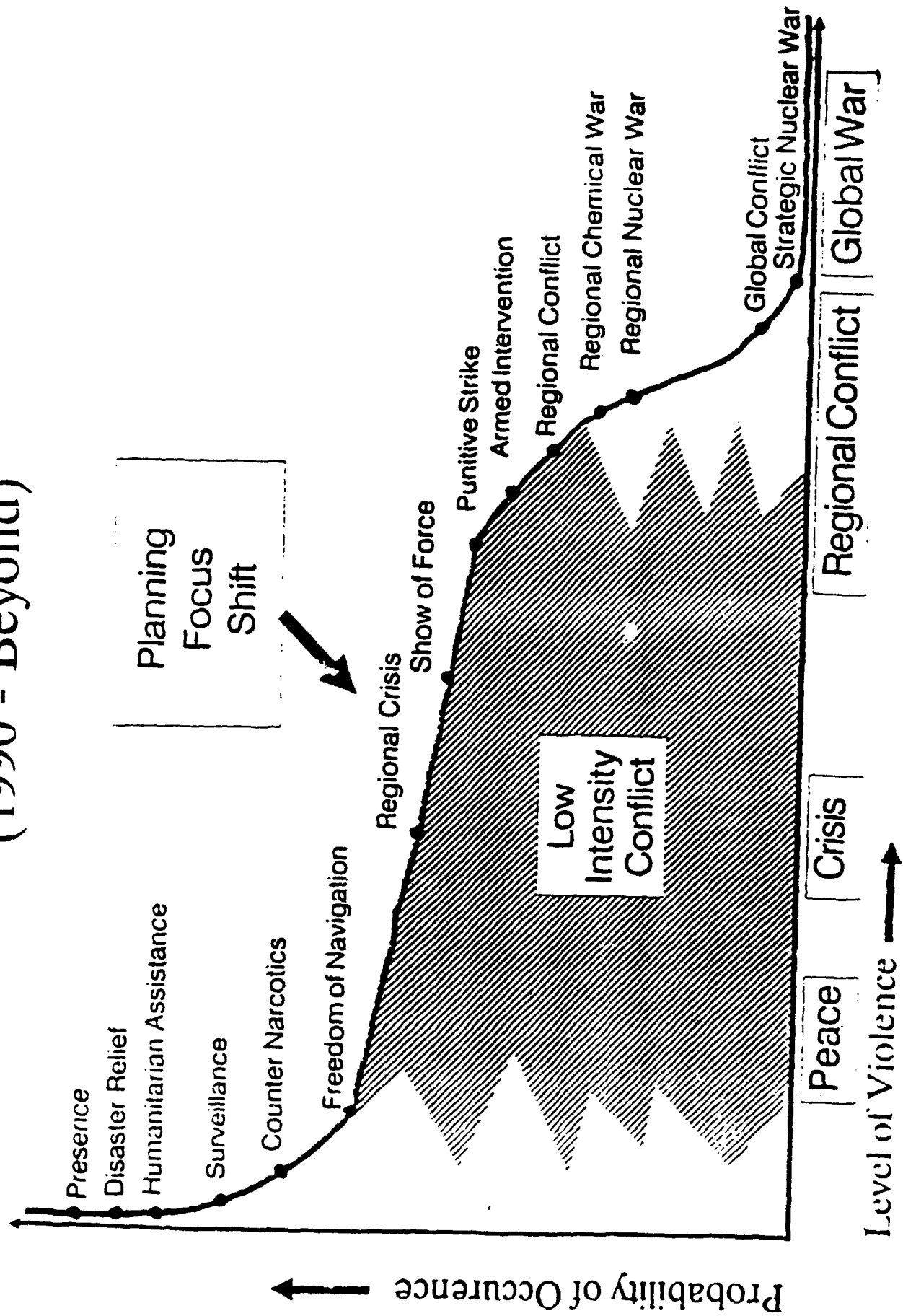
\* Agana, Guam is no longer a permanent deployment site for MPA due to decreased submarine activity in that area. Maintained in a caretaker status, MPA facilities there are periodically exercised for detachments and special exercises.

\*\*Flexible sites would be maintained above the level of caretaker status for routine detachments of MPA forces. This would require fewer personnel than a fully deployed P-3 squadron.

Figure 2



# OPERATIONAL CONTINUUM (1990 - Beyond)



Probability of Occurrence ↑

Level of Violence →

terms of three levels of conflict previously addressed: warfighting, peacetime presence, and crisis response and contingency operations.

#### A. WARFIGHTING

The Soviets, with their large fleet of strategic nuclear submarines, remain the only military force capable of posing a credible threat to the homeland of the United States. With their nuclear and diesel power attack submarines, they also have the capability of threatening carrier battle groups (CVBGs) and SLOCs critical to both the survival of the United States and our allies. At the height of the Cold War, Soviet strategic nuclear submarines could be found transiting close to the shores of the United States or patrolling in open-ocean areas in the Atlantic and Pacific. MPA was well suited for the role of locating, maintaining constant surveillance of, and destroying these submarines if the need arose. Forward deployed VP squadrons assisted in this role while also protecting the SLOCs and providing an outer layer of defense for the CVBG against Soviet attack submarines.

However, even before the Cold War had ended, advances in Soviet ballistic missile technology had caused a dramatic shift in Soviet submarine employment strategy. Improvements in the range and accuracy of Soviet ballistic missiles gave the Soviets the capability to launch an attack against the United States from the relative safety of their own coastal waters. This new capability gave birth to the Soviet "bastion

strategy", - i.e. Soviet strategic nuclear submarines began conducting patrols close to their territorial waters, protected by numerous attack submarines, and easily within range of shore based aircraft. This strategy employs a significant portion of the Soviet attack submarine force for the protection of the strategic nuclear submarine force against the United States' submarines. The Soviet attack submarines not required for protecting the bastions could, if required, surge forward to threaten United States and allied SLOCs, surface naval forces, and our own strategic nuclear submarines.

The implications of this change in Soviet strategy for MPA are tremendous. As the Soviet submarines have receded, so have MPA's opportunities to locate and track them. There is no longer a requirement for MPA to patrol virtually all the oceans in the Northern hemisphere protecting against the threat of a Soviet submarine-launched ballistic missile attack. Even a return to the Cold War would not change this reality.

As long as the Soviets maintain their impressive nuclear capability however, a key element of the maritime strategy must be to maintain a viable force in place to monitor Soviet submarine activity and to form a defensive barrier against a possible surge of Soviet submarines beyond their current operating areas. Maritime strategy in a general war scenario could conceivably entail

"early offensive operations in the Norwegian Sea and beyond" ... to narrow Soviet strategic choices ... to alter favorably the strategic-nuclear balance; to support Norway and Great Britain (and Iceland); and generally to press the Soviet military frontier backwards ... (t)he "control" of the Norwegian Sea would not be at stake; capability or willingness to prosecute the war successfully--based on either side's ability to use the Norwegian Sea--would be at stake." 14

This offensive United States and allied thrust into the Norwegian Sea would require a massive campaign under the most difficult of environmental conditions, involving multiple CVBGs, attack submarines, MPA, USAF TAC aircraft and harpoon equipped B-52s. Under the protective cover of USAF and Navy tactical air, MPA and CVBG based air and surface assets would conduct anti-submarine warfare. B-52s, carrier air and surface assets would conduct anti-surface warfare against the Soviet Northern Fleet.

If this offensive campaign into the Soviet's strength was successful, it could certainly achieve the strategic objectives mentioned. However, the feasibility and acceptability of such a campaign is doubtful. Neutralizing Soviet strategic nuclear submarines under the protective cover of Soviet shore-based air, attack submarines, and the formidable Northern Fleet has a very low probability of success. In fact, any attempt to do so would involve the increased likelihood of escalation to nuclear conflict--"use it or lose it".

An alternate strategy would involve containment of the Soviet Northern Fleet just north of the GIN gap. NATO forces

would implement simultaneously a parallel strategy of mining the Baltic and Danish straits to prevent the Soviet Ballistic Fleet from access to the shallow waters of the North Sea and English Channel. Although the same United States and allied forces would be required, this strategy would involve considerably less risk, the expectancy of fewer losses, and would be more feasible. By preventing a Soviet "breakout" into the Atlantic Ocean from either the GIN gap or the Baltic Sea, sea control for British and European SLOCs would be assured.

Maritime strategy in the Pacific could follow similar reasoning. MPA's role in either of these strategies would be substantial. Whether providing ASW support to CVBGs operating in the Northwestern Pacific Ocean and the southern reaches of the Norwegian Sea, or operating independently if the Soviets surged their attack submarines forward, MPA would play a major role in protecting United States and allied SLOCs and naval forces.

The two locations best suited for support of this strategy are Keflavik, Iceland and Misawa, Japan. Keflavik is strategically significant because it is located in the GIN gap. Soviet submarines from their Northern Fleet must transit the GIN gap for access to the Atlantic Ocean. Although not as strategically located as Keflavik, Misawa is the closest MPA base to the Soviets' Pacific Fleet of submarines at Petropavlovsk-Kamchatski. One VP squadron from the Atlantic

Fleet and one from the Pacific Fleet, deployed to Keflavik and Misawa respectively, would provide the first line of defense against the possible reemergence of the Soviet attack submarines (Figure 2). Should that occur, each deployed squadron would require augmentation via a rapid surge of ready MPA forces from CONUS to provide the extensive ASW effort required to counter the Soviet threat.

#### KEY OPERATIONAL CONCEPTS

In a peacetime scenario, the primary mission of the deployed VP squadrons at Keflavik and Misawa would be gathering acoustic intelligence on Soviet submarines and performing routine surveillance missions. As the Soviets continue both to produce new submarines and retrofit their existing submarines with quieter technology, these squadrons must continue a dedicated effort to update our own intelligence on the changing acoustic characteristics. Equally as important is to continue to operate with our European and Japanese allies to maintain and advance our own tactics, capabilities, and interoperability. This peacetime role can easily be performed by the one deployed VP squadron from each coast with augmentation throughout most of the year by reserve squadrons performing their Annual Training.

This peacetime positioning of United States and allied MPA forces at Keflavik and Misawa ensures that ASW forces are

strategically placed for an immediate, albeit limited response to indications of hostile intentions by the Soviets or the commencement of actual hostilities. Because the current situation in the Soviet Union makes a short-notice general war much less likely, the United States can anticipate significant indications and warnings preceding a war with the Soviet Union. Regardless of the warning time available however, the President, acting under the authority of TITLE 10 USC 263b, can quickly call up all or part of the reserve MPA forces for a rapid surge of MPA forces to threat determined locations. Unlike heavy ground forces, P-3 reserve squadrons can be forward deployed and operational within a few days of notification. Short of a call-up or partial mobilization, VP and VP(S) squadrons in CONUS and deployed VP(S) squadrons could also be deployed to forward sites. Under full mobilization, reserve SAU augmentees would fly in to fill out VP(S) aircrews to full warfighting capacity.

#### B. PEACETIME PRESENCE.

MPA forces have traditionally exercised the role of peacetime presence by continuous deployment throughout the Northern hemisphere. This allowed MPA to closely monitor Soviet attack submarines transiting and patrolling these waters. Again, as the Soviet presence has receded, this level of presence is no longer required. Clearly, some level of

presence is still required, and it should be flexible and supportive of the missions of warfighting, crisis response and contingency operations. MPA can fulfill its mission of peacetime presence with the proposed force through a strategy of flexible response. Rather than continuous presence, MPA should provide a presence in direct coordination with transiting and patrolling CVBGs and SAGs.

#### KEY OPERATIONAL CONCEPTS

MPA will substantially increase its operational focus from independent ASW to coordinated operations with the CVBGs and SAGs. VP squadrons deployed to Keflavik and Misawa will provide crew, aircraft and maintenance detachments to work directly with the CVBG/SAGs as they transit and patrol. Reserve squadrons and deployed VP(S) squadrons will augment this effort as required. This employment strategy will require a degree of flexibility and coordination not routinely exercised today, but entirely within the capability of the restructured MPA forces.

The benefits of this strategy are numerous. The drawdown of United States MPA crews from Keflavik and Misawa in support of this flexible response encourages increased burden sharing by NATO and Japanese MPA. It will also require closer coordination and integration of United States and allied MPA crews. Dedicated integration of MPA in support of



surface naval forces will provide direct mission related training; continuously exercising coordinated operations with these forces would enable MPA flight crews to train the way they would be expected to fight. In the process, MPA will maintain familiarity with the operating environments of all theaters in which the nation conducts its maritime mission of sea control and peacetime forward presence. Most importantly, operations in support of the CVBG will enable MPA to routinely exercise the infrastructure of the vast network of ASWOCs, MPA related facilities, organizations and equipment so critical to the support of forward operations.

C. CONTINGENCIES AND CRISIS RESPONSE.

Historically, the United States Navy has usually been the first choice if the nation's leaders for response to Peacetime Contingency Operations (PCO) and regional crises. In the wake of the Cold War, the potential for increasing instability in regions affecting enduring United States interests obviates the need for a strong, responsive Navy. Whether the future Navy continues to employ a strategy based on the CVBG concept or some variation involving independently deploying SAGs, MPA will continue to play a significant role. Continued full integration of MPA into the National Maritime Strategy is necessary, and, through a strategy of flexible response, can be achieved. This peacetime employment strategy

directly prepares MPA for effective response in crisis and contingency situations.

One peacetime contingency operation that has seen increased United States Navy involvement in recent years is drug interdiction. As anti-drug operations have intensified, both active and reserve P-3 squadrons have become increasingly involved in providing large area surveillance in the Caribbean Sea, the Gulf of Mexico, and the Atlantic and Pacific Oceans. The reductions in the number of both regular and reserve VP squadrons, and their involvement in the flexible response strategy, will preclude any future meaningful contribution to the drug interdiction mission. VP(S) squadrons are ideally suited for this mission however.

Regional crisis and other types of PCOs will involve a much higher level of violence than normally associated with the Navy's role in drug interdiction operations. Although at the time of this writing, not all of the operational data has been published from Desert Shield/Desert Storm, one can speculate that MPA participated to some degree in the Gulf War. Although Iraq's small navy did not pose a submarine threat, one can easily envision a scenario in which United States naval forces may have to neutralize a small but potent enemy submarine force.

Admittedly, no country other than the Soviet Union has a large, well trained submarine force. However, the British experience in the Falklands/Malvinas conflict demonstrates the

potentially devastating effects that even a small enemy submarine force can have on naval operations in support of a land campaign. The British expended extraordinary efforts to neutralize the Argentine submarine force. They were assisted in this effort by the fact that the Argentine submarine crews were inadequately trained in the use of their own torpedoes.<sup>15</sup> Had the Argentines been able to successfully operate their torpedoes, British losses may have been sufficiently high to bring this conflict to a negotiated settlement in favor of the Argentine government. In the case of the United States Navy, a small submarine fleet may be capable of destroying one or more high profile naval targets with unacceptably high casualties. This alone has the potential to destroy the public support required to obtain strategic objectives.

The message should be clear that in an environment where increasing numbers of nations are acquiring submarines, the Navy will eventually have to deal with that threat. CVBGs and MPA must work to improve their interoperability and their capabilities in the area of shallow water ASW in a potentially hostile air and surface environment.

#### KEY OPERATIONAL CONCEPTS

Detachments from deployed VP squadrons are available for response to the full range of PCOs and regional crises with the exception of drug interdiction. One VP(S) squadron

from each coast, deployed to the United States bases in Puerto Rico and Panama, will provide surface surveillance for the continuing drug interdiction effort. Partial VP(S) crews would be the primary forces assigned to this mission. VP(S) full crews would assist in drug interdiction yet would be available for detachments in support of peacetime presence and contingency/crisis situations. A situation involving a potentially hostile enemy submarine force may require a larger MPA force than was available in the active duty force. In this case, a "200K call-up" could provide a rapid surge of reserve VP assets to the hostile theater or to backfill a deployed squadron as it redeployed all its crews to the theater.

## CHAPTER VII

### CONCLUSION

The P-3 aircraft was one of the workhorses in the winning of the Cold War, as for more than 20 years VP aircrews continually demonstrated to the Soviets that there would be no sanctuary for their submarines in the vital ocean areas of the world, whether they be in the Atlantic, Pacific, or the Mediterranean theaters. Now the world has changed - the Soviet submarine threat has been altered by changes in technology and strategic thinking as well as by internal politics within the Soviet Union, while in our own hemisphere the drug problem has continued virtually unabated, plaguing the United States while threatening the very survival of the democratic governments of several of our South and Latin American neighbors. It is time for MPA to change with the world, as we no longer have a valid requirement supporting a strategy emphasizing the need for our VP forces to do single platform, open-ocean ASW in low threat environments.

The proposed MPA force structure and employment planning is at once suitable, feasible, and acceptable. It provides adequate forces to fulfill our overseas peacetime presence commitments while maintaining our ASW infrastructure and a credible crisis response capability, and also provides tailored forces to be employed in anti-drug and other open-ocean surveillance operations. Likewise, it considers MPA's

role in the Total Force concept, and the role of allied MPA in the implementation of our own Maritime Strategy. Lastly, it enables us to keep forward deployed forces involved in our efforts to maintain ASW superiority, and postures our active and reserve forces such that they can rapidly respond to provide an effective ASW counter in the event of a reemergence of the Soviet submarine threat. In the present fluid international environment, this type of strategic flexibility in force employment is essential to our continued success as the leader of the free world.

## FOOTNOTES

1. David S. Steigman, "Scaling Back", Navy Times, April 22, 1991, p. 26.
2. U.S. Congress. Senate Committee on Armed Services. National Defense Authorization Act for Fiscal Year 1991. (Washington: U.S. Govt. Print. Off., 1990), Report 101-384.
3. Ibid.
4. Carlisle A.H. Trost, "Maritime Strategy", U.S. Naval Institute Proceedings, May 1990, p. 92.
5. James D. Watkins, "The Maritime Strategy", U.S. Naval Institute Proceedings, January 1986, pp. 7-9.
6. Richard Sharpe, "Despite Perestroika, Soviet Naval Capability Continues to be Formidable", Almanac of Sea Power, January 1990, p. 37.
7. Department of the Navy, Report to the Congress, Fiscal Year 1991. (Washington D.C., 1990), p. 5.
8. "NATO Intensifies Antisubmarine Warfare Research", Defense News, September 11, 1990, p. 10.
9. Richard Sharpe, ed., Jane's Fighting Ships. (Survey, UK: Sentinal House, 1990), pp. 261-579.
10. The White House, National Security Strategy of the United States. (Washington: March 1990), p. 25.
11. George Bush, "United States Defenses: Reshaping Our Forces", Speech, Aspen Institute, Aspen, Colorado: August 2, 1990.
12. Ibid.
13. Ibid.
14. Colin Gray, "The Maritime Strategy is Not New", U.S. Naval Institute Proceedings, January 1990, p. 68.
15. James Fitzgerald and John Benedict, "There is a Sub Threat", U.S. Naval Institute Proceedings, August 1990, p. 63.

## BIBLIOGRAPHY

- Bush, George. "United States Defenses: Reshaping Our Forces". Speech. Aspen Institute. Aspen, Colorado: August 2, 1990.
- Department of the Navy. Report to the Congress. Washington, D.C.: 1990.
- Fitzgerald, James and Benedict, John. "There is a Sub Threat". U.S. Naval Institute Proceedings, August 1990, pp. 57-63.
- Gray, Colin. "The Maritime Strategy in Not New". U.S. Naval Institute Proceedings, January 1990, pp. 66-72.
- "NATO Intensifies Antisubmarine Warfare Research". Defense News, September 11, 1990, pp. 10-12.
- Sharpe, Richard. "Despite Perestroika, Soviet Naval Capability Continues to be Formidable". Almanac of Sea Power, January 1990, pp. 36-44.
- Sharpe, Richard ed. Jane's Fighting Ships. Survey, UK: Sentinal House, 1990.
- Sherman, Kenneth B. "Orion the Hunted". U.S. Naval Institute Proceedings, October 1986, pp. 90-92.
- Steigman, David S. "Scaling Back". Navy Times, April 22, 1991, pp. 24-26.
- The White House. National Security Strategy of the United States. Washington: 1990.
- Trost, Carlisle A.H. "Maritime Strategy". U.S. Naval Institute Proceedings, May 1990, pp. 92-100.
- U.S. Congress. Senate. Committee on Armed Services. National Defense Authorization Act for Fiscal Year 1991. Washington: U.S. Govt. Print. Off., 1990.
- Watkins, James D. "The Maritime Strategy". U.S. Naval Institute Proceedings, January 1986, pp. 3-47.